

NERONOV. N. P.

"Sur Quelques Questions Liees Avec La Determination Des Tensions Dans
Les Cables De Levage," Prik. Matemat. i Mekh., 4, No. 2, 1940;

NERONOV, N. P.

"Concerning the Limits of a *Domaine* From the Variations in the Cable
Leverage," Dok.AN, 54, No. 4, 1946;

NERONOV, N. P.

NERONOV, N. P. "On the limits of the region of variations in stress in a lifting cable",
Zapiski Leningr. gornogo in-ta, Vol. XXII, Part 2, 1948, p. 219-49.

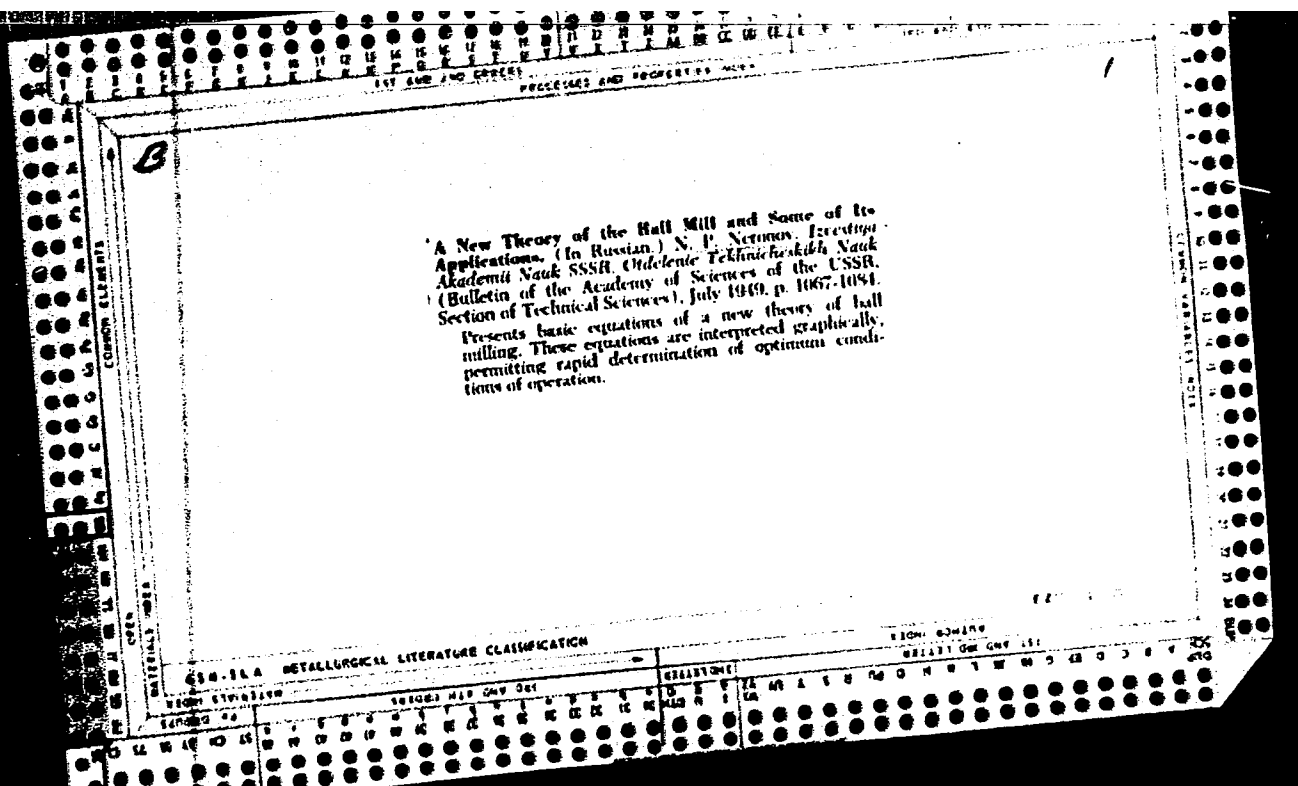
SO: U-4393 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

NERONOV, N. P.

"New Theory of the Ball Mill and Several of its Applications", 7,
1949. Leningrad Min. Inst., 1948.

NERONOV, N. P.

"Answer to L. B. Levenson's Comment", Iz. Ak. Nauk SSSR, Otdel. Tekh.
Nauk, 7, 1949;



NERONOV, N. F.

37332. Opredelenie napryazheniy v pod "ernyykh kanatakh dlya ralykh vysot pod" era i spuska. Zapiski leningr. Gornogo in-ta, t. xxiii, 1949, s. 195-212. Romanov, V. A. K voprosu nichisleniya vesov neizvestnykh pri reshenii normal'nykh uravneniy po sposobu gaussa. Sm. 37156

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

NERONOV, N.P., professor,

Calculation of mine hoisting ropes. Zap.Len.gor.inst.32 no.1:
102-111 '54. (MLRA 9:1)
(Mine hoisting) (Wire rope)

SOV/124-57-9-9961

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 9, p 13 (USSR)

AUTHORS: Neronov, N. P., Zakharevich, A. F., Zhuravlev, P. A.

TITLE: On the Theory of Vibrating Machinery (K teorii vibratsionnykh mashin)

PERIODICAL: Zap. Leningr. gorn. in-ta, 1956, Vol 33, Nr 3, pp 3-36

ABSTRACT: The motions of a model of a vibrating machine intended for the conveyance and grading of materials are studied. The machine consists of two parallel frames the lower of which is mounted on four shock absorbers and is connected to the top frame by means of flat springs. The two frames together form an elastic parallelogram. The vibration-exciter mechanism consists of a motor with an unbalanced load mounted on the lower frame. The pre-resonance as well as the post-resonance behavior of the system is studied. The problem is reduced to the integration of a system of differential linear equations with variable coefficients performed by the small-parameter method. The results obtained permit a determination of the natural frequencies of vibrations and the resonance conditions of the system. The aggregate data obtained serve in the stress

Card 1/2

On the Theory of Vibrating Machinery .

SOV/124-57-9-9961

analysis of the vibrating components of the machinery.

V. N. Geminov

Card 2/2

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 2, p 8 (USSR) SOV/124-58-2-1544

AUTHOR: Neronov, N. P.

TITLE: The Mechanics of a Ball Mill (Mekhanika sharovoy mel'nitsy)

PERIODICAL: Zap. Leningr. gorn. in-ta, 1956, Vol 33, Nr 3, pp 37-53

ABSTRACT: The article gives an analysis of the existing theories of the action and energy consumption of ball mills and offers an advanced theory carried out to the point of giving equations suitable for design calculations. The shortcoming of all existing theories consists in the lack of the assessment of many details of the motions pertaining to a system comprised of a drum, balls, and ore. The generally accepted assumption that the inner layers of balls crush the ore by normal impacts alone is not accurate. Disregarding the residual energy of the balls upon completion of their impact on the ore leads to somewhat underrated values of the theoretical power. The best coincidence of theoretical and actual data is obtained by the assessment of the interacting forces among all the balls in contact. After retreating from the drum wall the balls form an arch shaped like a catenary; the latter is broken at the beginning of the free parabolic

Card 1/2

The Mechanics of a Ball Mill

SOV/124-58-2-1544

motion of the balls. The author makes a conclusion about the necessity of developing a theory that takes into account the radial pressure and based on the theory of cohesionless bodies with evaluation of the sliding effects.

V. N. Geminov

Card 2/2

NERONOV, N. P.

137-1957-12-23006

Translations from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 21 (USSR)

AUTHOR: Neronov, N. P.

TITLE: On the Power Consumption of a Ball Mill (O raskhode energii v sharovoy mel'nitse)

PERIODICAL: Obogashcheniye rud, 1957, Nr 1, pp 10-13

ABSTRACT: A survey. An illustration is given, also, in which mathematical data of the article are used in the determination of the capacity of a ball mill of the ShR-3 type. Bibliography: 7 references.
A. Sh.

1. Metallurgy-USSR
2. Ball mills-Power consumption

Card 1/1

NERONOV, N.P.

Power consumption by ball mills. Obogrud 3 no.4:50-51
'58. (MIRA 12:2)
(Crushing machinery--Electric driving)

NERONOV, N.P.

Determining the tensile stress in elevator cables. Zap. LGI
36 no.3:94-100 '58. (MIRA 16:5)
(Cables) (Strains and stresses)

NERONOV, N.P., prof.

Maximum tension in mine hoisting ropes under regular conditions
of hoisting. Izv.vys.ucheb.zav.; gor.zhur. no.10:107-112 '59.
(MIRA 13:5)

1. Leningradskiy gornyy institut.
(Mine hoisting)

NERONOV, N.P., prof.

Unsuccessful attempt to develop the theory of the movement of balls
in ball mills. Obog.rud 5 no.2:55-56 '60. (MIRA 14:8)

1. Leningradskiy gornyy institut.
(Crushing machinery)

S/834/61/037/003/002/005
B104/B186

AUTHOR: Neronov, N. P.

TITLE: Plane potential flow of a liquid around some algebraic contours

SOURCE: Leningrad. Gornyy institut. Zapiski. v. 37, no. 3. Moscow, 1961, Matematika, fizika. 75 - 90

TEXT: A study is made of the potential flow of a liquid around some algebraic bodies, the determination of wing profiles with double stagnation points and their construction. In the first chapter the conformal mappings

$$z = c_0 + c_1 w + \sum_{p+q=n} c_n(p, q) w^{\frac{p}{n}} (w - w_0)^{\frac{q}{n}}. \quad (5)$$

$$c_0 = a_0 + ib_0; \quad c_1 = a_1 + ib_1; \quad c_n(p, q) = a_n(p, q) + ib_n(p, q). \quad (6)$$

of contours with two critical points are discussed for the cases $n = 2$ and $n = 3$. The corresponding conformal mappings are

$$z = x + iy = c_0 + c_1 w + c_2 w^{\frac{1}{2}} (w - w_0)^{\frac{1}{2}}, \quad (13)$$

Card 1/6

Plane potential flow of a liquid ...

S/834/61/037/003/002/005
B104/B186

and

$$c_0 = a_0 + ib_0, \quad c_1 = a_1 + ib_1, \quad c_2 = a_2 + ib_2 \quad (14)$$

and

$$z = c_0 + c_1 w + c_2(1, 2) w^{\frac{1}{2}} (w - w_0)^{\frac{2}{3}} + c_3(2, 1) w^{\frac{2}{3}} (w - w_0)^{\frac{1}{3}}, \quad (28)$$

$$\begin{aligned} c_0 &= a_0 + ib_0; \quad c_1 = a_1 + ib_1; \\ c_2(1, 2) &= a_2(1, 2) + ib_2(1, 2); \\ c_3(2, 1) &= a_3(2, 1) + ib_3(2, 1). \end{aligned} \quad (29).$$

The parameter representation

$$\begin{aligned} x &= a_0 + a_1 \rho \pm a_2 \rho^{\frac{1}{2}} (w_0 - \rho)^{\frac{1}{2}}, \\ y &= b_0 + b_1 \rho \pm a_2 \rho^{\frac{1}{2}} (w_0 - \rho)^{\frac{1}{2}}, \end{aligned} \quad (19)$$

of the upper and the lower part of the mapped cylinder is obtained for $n = 2$. For $n = 3$, the parameter representation

Card 2/6

Plane potential flow of a liquid ...

S/834/61/037/003/002/005
B104/B186

$$\begin{aligned} x &= a_0 + a_1 \rho - \left[\frac{1}{2} a_3(1, 2) + \frac{\sqrt{3}}{2} b_3(1, 2) \right] \rho^{\frac{1}{3}} (\omega - \omega_0)^{\frac{2}{3}} + \\ &+ \left[\frac{1}{2} a_3(2, 1) - \frac{\sqrt{3}}{2} b_3(2, 1) \right] \rho^{\frac{2}{3}} (\omega_0 - \rho)^{\frac{1}{3}}; \\ y &= b_0 + b_1 \rho + \left[\frac{\sqrt{3}}{2} a_3(1, 2) - \frac{1}{2} b_3(1, 2) \right] \rho^{\frac{1}{3}} (\omega_0 - \rho)^{\frac{2}{3}} + \\ &+ \left[\frac{\sqrt{3}}{2} a_3(2, 1) + \frac{1}{2} b_3(2, 1) \right] \rho^{\frac{2}{3}} (\omega_0 - \rho)^{\frac{1}{3}} \end{aligned} \quad (30)$$

is obtained for the upper part and the parameter representation

$$\begin{aligned} x &= a_0 + a_1 \rho + \left[-\frac{1}{2} a_3(1, 2) + \frac{\sqrt{3}}{2} b_3(1, 2) \right] \rho^{\frac{1}{3}} (\omega_0 - \rho)^{\frac{2}{3}} + \\ &+ \left[\frac{1}{2} a_3(2, 1) + \frac{\sqrt{3}}{2} b_3(2, 1) \right] \rho^{\frac{2}{3}} (\omega_0 - \rho)^{\frac{1}{3}}; \\ y &= b_0 + b_1 \rho + \left[-\frac{\sqrt{3}}{2} a_3(1, 2) - \frac{1}{2} b_3(1, 2) \right] \rho^{\frac{1}{3}} (\omega_0 - \rho)^{\frac{2}{3}} + \\ &+ \left[-\frac{\sqrt{3}}{2} a_3(2, 1) + \frac{1}{2} b_3(2, 1) \right] \rho^{\frac{2}{3}} (\omega_0 - \rho)^{\frac{1}{3}}. \end{aligned} \quad (31)$$

Card 3/6

Plane potential flow of a liquid ...

S/834/61/037/003/002/005
B104/B186

for the lower part. The conformal mapping

$$Z = \frac{z(z+d)}{z+e'}, \quad z = c_0 + c_1 w + c_2 w^{\frac{1}{2}} (w - w_0)^{\frac{1}{2}} \quad (38)$$

is a combination of both these mappings. If

$$c_0 = a_0 + ib_0, \quad c_1 = c_2 = a_1 + ib_1, \quad (39)$$

then

$$X = \frac{x^2 + xy^2 + (d+e')x^2 + (d-e')y^2 + de'x}{(x+e')^2 + y^2} \equiv X(x, y);$$

$$Y = \frac{y^2 + x^2y + 2e'xy + de'y}{(x+e')^2 + y^2} \equiv Y(x, y);$$

$$x = a_0 + a_1 \rho \pm b_1 \rho^{\frac{1}{2}} (w_0 - \rho)^{\frac{1}{2}}, \quad (49)$$

$$y = b_0 + b_1 \rho \pm a_1 \rho^{\frac{1}{2}} (w_0 - \rho)^{\frac{1}{2}},$$

$$0 \leq \rho \leq w_0.$$

Card 4/6

Plane potential flow of a liquid ...

S/834/61/037/003/002/005
B104/B186

A study of the relations between the analytic representation of the problem given here and the geometrical methods of N. Ye. Zhukovskiy (Teoreticheskiy osnovy vozdukhoplavaniya - Theoretical fundamentals of aviation, Izd. II., Gostekhizdat, 1925, p. 142 - 146) shows that the known Zhukovskiy profile (Joukowski profile) constitutes a special case of the profile types considered: In this case the conformal mapping $Z = z(z + d)/(z + e')$ is used, while Zhukovskiy used $\zeta = \frac{e'}{r} \frac{z(z + d)}{z' + e'} = \frac{e'}{r} Z$, based on S. A. Chaplygin's transformation. Hence the profiles differ by the factor $e'/r = \sin \gamma$. If

(55),

$$c_0 = a_0 + ib_0; \quad c_1 = a_1 + ib_1; \quad c_2 = a_2 + ib_2; \\ d = d_1 + id_2; \quad e' = e'_1 + ie'_2.$$

then the profile

$$X = \frac{x^2 + xy^2 + (d + e')x^2 + (d - e')y^2 + de'x}{(x - e')^2 + y^2}; \\ Y = \frac{y^2 + x^2y + 2e'xy + de'y}{(x + e')^2 + y^2}; \quad (69)$$

Card 5/6

Plane potential flow of a liquid ...

S/834/61/037/003/002/005
B104/B186

$$\begin{aligned} x &= c_1 \rho + b_2 \rho^{\frac{1}{2}} (1 - \rho)^{\frac{1}{2}}; \\ y &= \pm a_2 \rho^{\frac{1}{2}} (1 - \rho)^{\frac{1}{2}}. \end{aligned} \quad (70)$$

$$d = -\frac{c_1}{e'} (c_1 + 2e').$$

is obtained. The parameter form of the equations of these contours makes it possible to calculate the critical points directly. There are 7 figures.

Card 6/6

L 45975-66 EWT(m)/EWP(k)/EWP(e)/EWP(t)/ETI IJP(c) JD/JH

ACC NR: AR6028430

SOURCE CODE: UR/0137/66/000/005/G018/G018

AUTHOR: Neronov, V. A. ; Lamikhov, L. K. ; Samsonov, G. V. 21
B

TITLE: Optimization of the preparation of AlB_{12} by an out-of-furnace metallothermic process

SOURCE: Ref. zh. Metallurgiya, Abs. 5G132

REF SOURCE: Sb. Issled. v obl. khimii i tekhnol. mineral'n. soley i okislov. M. -L., Nauka, 1965, 308-311

TOPIC TAGS: boric anhydride, aluminum boride, metallothermic process, aluminothermic process ✓

ABSTRACT: The effect of the amount of gypsum as the preheating admixture, the amount of Al and preheating temperature of the charge has been analyzed on the process of aluminothermic preparation of AlB_{12} . Boric anhydride with 98% B_2O_3 , ground to a 0.15 mm particle size, Al powder, and 0.15 mm particle-size gypsum roasted at 700—800C for 2 hr were used as the starting material. The optimum conditions for obtaining AlB_{12} without the admixture of aluminum boride and the highest yield of B (> 70%) are: preheating temperature of the charge—

Card 1/2

UDC: 669.781.04

L 45975-66

ACC NR: AR6028430

540—580C; amount of gypsum in the charge—40. 25--50 g; and amount of Al—
74—78 g. G. Svordtseva. Bibliography of 8 titles. [Translation of abstract] [NT]

SUB CODE: 11/

hs

Card 2/2

TUPIKOVA, N.V., LUK'YANOVA, I.V., HERONOV, V.M., RAKOVSKAYA, E.M.

Quantitative characteristics and mapping of the populations of
small mammals in mountain steppes of the Altai. Biul.KOIP. Otd.
biol. 63 no.5:145-146 S-O '58 (MIRA 11:12)
(ALTAI MOUNTAINS--RODENTIA)

TUPIKOVA, N.V.; NERONOV, V.M.

Method of mapping the quantitative distribution of animals in a
large area. Vest. Mosk. un. Ser. 5: Geog. 15 no. 5:35 43
S-O '60. (MIRA 13:11)

1. Kafedra biogeografii Moskovskogo universiteta.
(Hamsters) (Zoogeography--Maps)

NERONOV, V.M.

Possibilities of recording the encounters with birds of prey for
defining the distribution of rodents in small areas. Vop. ekol.
4:132 '62. (MIRA 15:11)

1. Institut epidemiologii i mikrobiologii imeni N.F.Gamaleya
AMN SSSR, Moskva.
(Siberia--Birds of prey) (Siberia--Rodentia)

NERONOV, V.M.

Use of the method of recording the occurrences for the
relative genus of birds of prey. Ornitologiya no.5:386-391
'62. (MIRA 16:2)
(Altai Territory—Birds of prey) (Wildlife census)

NERONOV, V. M.

Special features of the changing population of murine rodents
in developing the black taiga at the foothills of the Altai
and Salair. Vest. Mosk. un. Ser. 5: Geog. 17 no.5:32-39
S-0 '62. (MIRA 15:10)

1. Kafedra biogeografii Moskovskogo universiteta.

(Altai Mountain region--Rodentia)
(Salair Ridge region--Rodentia)

NERONOV, V.M.

Effect of the economic activity of man on the population of murine rodents in the foothills of the Altai. Zool. zhur. 41 no.6: 922-926 Je '62. (MIRA 15:7)

1. Institute of Epidemiology and Microbiology, Academy of Medical Sciences of the U.S.S.R., Moscow.
(Staraya Barda District—Field mice)

NERONOV, V.M.; RAKOVSKAYA, E.M.

Small mammals of the Seminskiy Pass in the Altai Mountains.
Vest. Mosk. un. Ser. 5: Geog. 18 no.4:48-56 J1-Ag '63.

(MIRA 17:2)

1. Institut mikrobiologii i epidemiologii imeni Gamaleya i
Kafedra fizicheskoy geografii SSSR Moskovskogo gosudarst-
vennogo universiteta.

NERONOV, V.M.; SOKOLOVA, A.L.

Use of fur procurement data for mapping the quantitative distribution of game animals on the territory of the Soviet Union. Biol. MOIP. Otd. biol. 68 no.2:5-17. Moscow, '63. (MIRA 17:2)

NERONOV. V.M.

Methods of map drawing based on fur procurement data.

Biul. MOIP. Otd. biol. 70 no.3:7-15 My-Je '65.

(MIRA 18:10)

ACC NR: AP6021891 (A,N) SOURCE CODE: UR/0358/66/035/003/0275/0281

AUTHOR: Dubrovskiy, Yu. A.; Belova, Ye. M.; Neronov, V. M.

ORG: Laboratory of Medical Zoology, Institute of Epidemiology and Microbiology, im. N. F. Gamalei, AMN SSSR (Laboratoria meditsinskoy zoologii Instituta epidemiologii i mikrobiologii AMN SSSR); Ashkhabad Institute of Epidemiology and Hygiene (Ashkhabadskiy Institut epidemiologii i gigiyny)

TITLE: Leishmanioma as an indicator of the concentration of leishmaniasis epizootics in gerbil populations

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 35, no. 3, 1966, 275-281

TOPIC TAGS: epidemiology, epizootic, animal disease, disease vector, gerbil, leishmaniasis

ABSTRACT:

Different forms of cutaneous leishmaniasis were found among gerbils in southeast Turkmenia. Ear lesions were both typical and atypical.

Leishmania were cultured from specimens prepared from tissues of apparently healthy ears. Where the outbreak was intense, most of the animals infected had typical lesions containing *Leishmania* and where less intense, few or no ear lesions. Orig. art. has: 2 figures and 5 tables. [W.A. 50; CBE-No. 10]

SUB CODE: 06/ SUBM DATE: 20Apr65/ ORIG REF: 008/

Card 1/1

UDC: 591.2-932.34:616.993.162-036.1-07

ACC NR: AT6031458

SOURCE CODE: UR/0000/65/000/000/0149/0157

AUTHOR: Neronov, V. M.; Ivanova, L. M.

ORG: Institute of Epidemiology and Microbiology im. N. F. Gamaleya, AMN SSSR
(Institut epidemiologii i mikrobiologii AMN SSSR); Ministry of Health RSFSR
(Ministerstvo zdavookhraneniya RSFSR)

TITLE: Problems involved in the construction of a map showing the distribution of tick-borne encephalitis in the RSFSR

SOURCE: Konferentsiya po metodam mediko-geograficheskikh issledovaniy. Moscow, 1965. Metody mediko-geograficheskikh issledovaniy (Methods of medicogeographical research); materialy konferentsii. Moscow, 1965, 149-157

TOPIC TAGS: medical geography, tick borne encephalitis, epidemiology, human ailment, ENCEPHALITIS, MAPPING

ABSTRACT: Problems of preparing regional maps for the study of tick-borne encephalitis epidemiology studies were discussed. Statistics were collected over a large area of both old and new population centers and were used in preparing maps of the distribution of the disease in varying degrees of acuteness, natural foci from year to year, and maps based on differences in thoroughness of data.
[WA-50; CBE No. 12]

SUB CODE: 06,08/ SUBM DATE: 17Sep65/ ORIG REF: 007/
Card 1/1

ACC NR: AT6031458

SOURCE CODE: UR/0000/65/000/000/0149/0157

AUTHOR: Neronov, V. M.; Ivanova, L. M.

ORG: Institute of Epidemiology and Microbiology im. N. F. Gamaleya, AMN SSSR
(Institut epidemiologii i mikrobiologii AMN SSSR); Ministry of Health RSFSR
(Ministerstvo zdravookhraneniya RSFSR)

TITLE: Problems involved in the construction of a map showing the distribution of tick-borne encephalitis in the RSFSR

SOURCE: Konferentsiya po metodam mediko-geograficheskikh issledovaniy. Moscow, 1965. Metody mediko-geograficheskikh issledovaniy (Methods of medicogeographical research); materialy konferentsii. Moscow, 1965, 149-157

TOPIC TAGS: medical geography, tick borne encephalitis, epidemiology, human ailment, *EN CEPHALITIS, MAPPING*

ABSTRACT: Problems of preparing regional maps for the study of tick-borne encephalitis epidemiology studies were discussed. Statistics were collected over a large area of both old and new population centers and were used in preparing maps of the distribution of the disease in varying degrees of acuteness, natural foci from year to year, and maps based on differences in thoroughness of data.
[WA-50; CBE No. 12]

SUB CODE: *06,03/* SUBM DATE: 17Sep65/ ORIG REF: 007/
Card 1/1

NERONOV, V. N.

"Determination of the Transverse Pressure of Peat by the Method of
Electric Extensometric Resistance," Torf. Prom., No. 1, 1949.

NERONOV, V.N.

Dehydration of larch tan waste. Leg.prom. 18 no.7:36-40 J1 '58.

(MIRA 11:9)

(Wood waste--Drying)

L 10108-63

ENT(1)/SDS--AFFTC/ASL

ACCESSION NR: AP3002729

S/0120/63/000/003/0100/0103

AUTHOR: Bezrukov, O. F.; Neronov, Yu. I.

53

TITLE: Pulse generator for observation of spin echo

52

SOURCE: Pribery i tekhnika eksperimenta, no. 3, 1963, 100-103

TOPIC TAGS: spin-echo observations, pulse generator, rectangular pulse combinations, relaxation time

ABSTRACT: The pulse generator generates five different rectangular pulse sequences corresponding to five basic methods of observation of spin echo. The generator provides output pulses with an amplitude up to 40 v, rise and decay times of approximately 0.1 microsec, and smoothly variable pulse duration of 2--200 microsec. Relaxation time can be varied within 0.03 and 15 sec. Selection of a desired pulse combination is accomplished by means of a five-position function switch. The following pulse combinations

BEZRUKOV, O.F.; VUKS, M.F.; NERONOV, Yu.I.

Proton relaxation in solutions of ternary butyl alcohol - water.
Ukr. fiz. zhur. 9 no.4:457-458 Ap '64. (MIRA 17:8)

1. Leningradskiy gosudarstvennyy universitet.

NERONOV, Yu.I.; DRABKIN, G.M.

Progressive motion of molecules in the system triethylamine -
water. Zhur.fiz.khim. 39 no.11:2691-2694 N '65.

(MIRA 18:12)

1. Leningradskiy fiziko-tekhnicheskoy Institut imeni A.F.
Ioffe.

NERONOVA, G.P.

AUTHORS: Levshin, V. L., Borodin, N. S. and Neronova, G. P. 51-3-9/14

TITLE: On Emission of Excited Phosphors ZnS-Mn.
(O Svechenii nakhodyashchikhaya pod возбужdeniyem fosforov ZnS-Mn.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.3, pp.258-266.
(USSR)

ABSTRACT: This paper was read at the Fifth All-Union Conference on Luminescence (Tartu, June 26, 1956). The authors studied change of emission intensity of Mn in ZnS-Mn phosphors, (0.001 g/g Mn, prepared at 850°C) at fixed temperatures from 20 to 170°C at various intensities of the exciting light. Emission intensities and spectra were measured also at fixed exciting intensities but at different temperatures. The phosphors were prepared in the laboratory of the Physics Institute of the Academy of Science of USSR. Thin layers of the substances (20 μ) were deposited on plates by evaporating from alcohol. The excitation was provided by a mercury lamp ГПК-2. Measurements were made at various wavelengths of excitation. Curves giving dependence of brightness of Mn emission, J, on the exciting

Card 1/4

On Emission of Excited Phosphors ZnS-Mn.

51-3-9/14

light intensity, I , are given in Fig.1. On excitation by 312 and 366 $m\mu$ wavelengths the emission intensity is given by Eq.1 $J = aI/(I + b)$, where a and b are constants. Table 1 gives values of these constants a and b for curves of Fig.1 obtained at 150°C. Fig.2 gives temperature dependence of the constant a . In contrast to the curves for 312 and 366 $m\mu$ which show saturation at higher values of the exciting light intensity I , no such saturation was observed for excitation with 405 and 436 $m\mu$ (Fig.3). Fig.4 shows temperature dependence of the emission intensity J on excitation by various wavelengths. The two upper parts of Fig.4, obtained at 312 and 366 $m\mu$ respectively, show a strong maximum at about 80-110°C. The lower two parts of Fig.4 which represent excitation at 405 and 436 $m\mu$ exhibit very weak or practically no maxima. The separate curves shown in each part of Fig.4 represent various exciting light intensities. Table 2 gives the increase of emission on increase of temperature, relative to emission at 20°C for various 366 $m\mu$ exciting light intensities. At weak

Card 2/4

On Emission of Excited Phosphors ZnS-Mn.

51-3-9/14

excitation temperature quenching causes decrease of emission at higher temperatures. When the exciting light is strong temperature quenching is relatively weaker and emission at higher temperatures is up to three times the emission at 20°C. The curves of Fig.4 show also that excitation intensity determines the temperature of maximum emission. With increase of excitation intensity this maximum occurs at higher temperatures. The authors suggest a mechanism for prolonged emission by ZnS-Mn phosphors which takes into account electron motion in the conduction band and hole motion in the valence band. The various transitions are shown in Fig.5. The authors also studied emission spectra of ZnS-Mn phosphors which contained different amounts of Mn and were prepared at different temperatures (sphalerite modification prepared at 850°C shown in Fig.7 and wurtzite modification prepared at 1200°C shown in Fig.8). Table 3 gives the light sums of Mn and Zn emissions at various temperatures and activator concentrations. It follows from Table 3 that: (1) on increase of temperature from 18-100°C Zn emission disappears but is fully compensated by increase of Mn emission;

Card 3/4

51-3-9/14

On Emission of Excited Phosphors ZnS-Mn.

(2) treatment of the phosphor at a higher temperature on preparation tends to strengthen Mn emission;
(3) increase of Mn concentration from 0.001 to 0.01 g/g causes a strong increase of Mn emission and total disappearance of Zn emission. Positions of Mn emission maxima in the sphalerite and wurtzite structures are the same: 595 m μ . Zn emission maximum in the sphalerite modification lies at 475 m μ and in the wurtzite modification at 450 m μ . The authors thank E. Ya. Arapova for preparation of phosphor samples. There are 8 figures, 3 tables and 8 references, 5 of which are Slavic.

Card 4/4

ASSOCIATION: Moscow State University imeni M. V. Lomonosov
(Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova.)

SUBMITTED: January 21, 1957.

AVAILABLE: Library of Congress

Neronova, G. P.

SUBJECT: USSR/Luminescence 48-4-6/48

AUTHORS: Levshin V.L., Borodin N.S. and Neronova G.P.

TITLE: On Luminescence of ZnS-Mn-Phosphors Being under Excitation
(O svechenii nakhodyashchikhsya pod vzbushdeniyem ZnS-Mn-fosforov)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, pp 499-501 (USSR)

ABSTRACT: Changes in the brightness of the manganese band of ZnS-Mn-phosphors with the rise of excitation intensity were investigated. Experiments were carried out with the following wavelengths of the exciting radiation: 312; 366; 405 and 436 mμ, and under the following temperatures: 20; 50; 110; 130 and 150°C.

Luminescence saturation was detected at excitation by 312 and 360 mμ wavelengths. The course of saturation curves is expressed by the formula:

$$J = \frac{aI}{I+b}$$

Card 1/3

TITLE:

On Luminescence of ZnS-Mn-Phosphors Being under Excitation
(O svechenii nakhodyashchikhsya pod vozbuzhdeniyem ZnS-Mn-
fosforov) 48-4-6/48

where J is the brightness of phosphor luminescence, I is the intensity of exciting light, and a and b are constants.

At the excitation by the lines of 405 and 436 $m\mu$ the rise of luminescence brightness occurred almost proportionally to excitation intensity and only slight traces of saturation were observed at very high intensities.

The temperature rise increases sharply the luminescence in the manganese band. Beginning from 70°C the temperature quenching is detected.

Emission spectra of the sphalerite and wurtzite modifications of ZnS-Mn-phosphors with various manganese concentrations and at various temperatures were also investigated. It was found out that the wurtzite modification favors development of manganese luminescence. The blue zinc luminescence is observed only at low temperatures. The rise of temperature causes the transfer of zinc luminescence into manganese one.

Card 2/3

TITLE: On Luminescence of ZnS-Mn-Phosphors Being under Excitation^{48-4-6/48}
(O svechenii nakhodyashchikhsya pod возбуждением ZnS-Mn-fosforov)

The article is followed by a discussion of some problems touched in the report.

No references are cited.

INSTITUTION: Moskva State University im. Lomonosov

PRESENTED BY:

SUBMITTED: No date indicated.

AVAILABLE: At the Library of Congress.

Card 3/3

KUZNETSOV, A.F.; BOGOMOLOV, A.M.; NERONOVA, G.P.

Experimental study of the functional nodes of a processing
device of the automatic hydrologic telemetering station.

Trudy GGI no.115:14-62 '64.

(MIRA 18:9)

NERONOVA, L. M.

Distribution of summer precipitations in Moscow Province. Study
TSIF no. 52:67-129 '57. (MIRA 10:8)
(Moscow Province--Rain and rainfall)

KOLESNIKOV, Aleksandr Ivanovich, doktor sel'khoz. nauk, prof.;
NERONOVA, M.D., red.

[Vertical landscaping; landscaping of buildings with
climbing plants] Vertikal'noe ozelenenie; ozelenenie
sooruzhenii v'iushchimisia rasteniiami. Moskva,
Stroizdat, 1964. 71 p. (MIRA 17:11)

NERONOVA, N. M.

"The Influence of Growth Substances on Acetone-Ethyllic Bacteria.

III. Fermentation in Synthetic Media," Mikrobiol., 15, No. 4, 1946.

Mbr. Microbiology Inst., Dept. Biol. Sci., Acad. Sci., -1946-

NERONOVA, N. M.

"Physiology of Nutrition of Thermophile and Mesophile Lactic Acid Bacteria," in
Reports of the Scientific-Research Work for 1945, Department of Biological Science,
Publishing House of the Academy of Science, Ussr, Moscow, 1947, P. 136, 511 Akllh

So: SIRA Si 90-53, 15 Dec. 1953

NERONOVA, N.M.

Investigations on nitrogen-vitamin feeding of butyric bacteria.

Trudy Inst.mikrobiol. no.2:100-106 '52.

(MIRA 5:12)

(VITAMIN B1, metabolism,
butyric bact.)

(VITAMIN B6, metabolism,
butyric bact.)

(NITROGEN, metabolism,
butyric bact.)

(BACTERIA,
butyric bact., nitrogen & vitamin B1 & B6 metab.)

YERUSALIMSKIY, N.D.; NERONOVA, N.M.; YARYGINA, N.P.

Effect of the conditions of the medium on physiological requirements
of butyric acid bacteria. Trudy Inst. Mikrobiol., Akad. Nauk S.S.S.R.
No2, 107-13 '52. (MLRA 5:12)
(CA 47 no.15:7591 '53)

1. Moscow State Univ.

NERONOVA, N.M.

Effect of carbohydrate structure on the development and growth of the mycelium of *Penicillium chrysogenum* IMI-257. Mikrobiologia 27 no.6:687-691 N-D '58. (MIRA 12:1)

1. Institut mikrobiologii AN SSSR.

(PENICILLIN, culture,

chrysogenum, eff. of carbohydrate structure on mycelial growth & develop. (Rus))

VERONOVA, N.M.

AUTHOR: Alferov, V. V. 001/34-34-4-8/60

TITLE: Continuous Fermentation and Breeding of Microorganisms
(Neprevyaynoye brozheniye i vyreshchivaniye mikroorganizmov)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, No 2, pp 106-108 (USSR)

ABSTRACT: The Institut mikrobiologii Akademii nauk SSSR (Microbiological Institute of the Academy of Sciences, USSR) convened a conference from October 13 to 15, 1958 which dealt with the investigation of ~~the~~ working ~~method~~ ~~in~~ this field as well as with the discussion of a further intensification of the production based on the activity of microorganisms. The conference was attended by more than 200 representatives of academic and scientific branch research institutes, enterprises, sovkhoses, universities, as well as foreign scientists. The following lectures were heard:
N. D. Iyermolinskii spoke of the theoretical foundation of the method of continuous microbe breeding and its prospects of application in the microbiological industry.
Ye. A. Plevako, Vsesoyuznyy nauchno-issledovatel'skiy institut khlebopekarnoy promyshlennosti (All-Union Scientific Research Institute of Bread-Production Industry) dealt with the problem of the breeding of yeast in solutions containing solasses.
P. M. Fisher, K. P. Indikter, V. A. Utenkova, N. Ya. Kaluzhnyy and A. P. Kryuchkov, Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznyy i sulfito-spirovoy promyshlennosti (All-Union Scientific Research Institute for the Industry of Hydrolysis and Sulfite Spirits) evaluated the theoretical and practical work in the field of continuous fermentation of wood hydrolyzates and sulfite liquor as well as their utilization for obtaining fodder yeast.
V. L. Maslov, Krasnoyarskiy gidroliznyy zavod (Krasnoyarsk Hydrolysis Plant) said that the introduction and completion of the continuous process of yeast breeding made it possible to increase the output of yeast factories by ten times.
V. L. Ivanovskiy, A. L. Malchenko, Vsesoyuznyy nauchno-issledovatel'skiy institut spirovoy i likernoy-vodochnoy promyshlennosti (All-Union Scientific Research Institute of the Spirit, Liqueur and Brandy Industry), V. N. Bakhtanovich, Detskuninskaya nauchno-issledovatel'skaya laboratoriya (Detskuninskaya Scientific Research Laboratory) reported on the experiment of applying the method of continuous fermentation

Card 1/4

Card 2/4

Continuous Fermentation and Breeding of Microorganisms GOV/50-59-2-1A/60

of the starch raw material and syrup in the alcohol and acetone-butanol industry.

S. A. Kovalev, All-Union Scientific Research Institute of the Alcohol, Liqueur and Brandy Industry reported on the problem of antiseptics in fighting infection due to ferments.

L. Yu. Medvedeva, Institut mikrobiologii Akademii nauk USSR (Microbiological Institute of the AS USSR) reported on the investigation of the morphological and physiological properties of yeast.

A. D. Kavalanka, Andrushevskiy spirtovoy zavod (Andrushevka Distillery), **N. Ye. Sarchenko**, Kalo-Viakovskiy spirtovoy zavod (Kalo-Viakovskiy Alcohol-Distillery), **K. R. Makarova**, Smolenskiy Sovmarkhoz (Smolensk Sovmarkhoz) reported on some working results obtained by distilleries in the syrup fermentation by using the method of continuous flow.

N. S. Laitysanskaya, Leningradskiy universitet (Leningrad University) characterized the correlation of reproduction processes and biochemical activity of acetic acid bacteria in the high-speed production of vinegar.

N. M. Voronova, Microbiological Institute of the AS USSR spoke of the possibility of obtaining vitamin B₁₂ by continuous breeding of propionic acid bacteria (propionococcus bakterii). **S. L. Brinberg**, **O. L. Grubovskaya**, Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov (All-Union Scientific Research Institute of Antibiotics) reported on the application of this method in the production of penicillin.

V. V. Tyatkins, All-Union Scientific Research Institute of the Spirit, Liqueur, and Brandy Industry showed that the method of semi-continuous breeding of the fungus *Aspergillus niger* accelerates fermentation. **B. V. Perfil'yev**, Leningrad University reported on the results of investigations of the natural microflora by the method of capillary microscopy which he had developed.

V. A. Lashin, Kiev University demonstrated his new batcher for continuous breeding of microorganisms in laboratory practice.

I. Vasil'ev and **V. Nidze** (Goschoelavukha) expressed their opinions on the methods of continuous breeding of microorganisms.

On this Conference it was pointed to the necessity of organizing the industrial production of cultures for continuous fermentation.

Card 4/4

NERONOVA, N.M.

Effect of stirring on the development of *Penicillium chrysogenum*
INMI-243 and its penicillin formation. Trudy Inst. mikrobiol.
no. 6:265-276 '59. (MIRA 13:10)

1. Institut mikrobiologii Akademii nauk SSSR.
(PENICILLIUM CHRYSOGENUM)

IYMERUSALIMSKIY, N.D.; KONOVA, I.V.; NERONOVA, N.M.

Determining vitamins and antibiotics by diffusion into agar. Report
No. 1: Simplified computations for the dish method. Mikrobiologiya
28 no.3:433-443 Ky-Je '59. (MIRA 13:3)

1. Institut mikrobiologii AN SSSR.
 (VITAMINS, determ.
 simplified computations for cup method (Rns))
 (ANTIBIOTICS, determ.
 same)

KONOVA, I.V.; NERONOVA, N.M.; IYERUSALIMSKIY, N.D.; BORISOVA, A.I.

Determining vitamins and antibiotics by diffusion into agar. Report
No.2: Quantitative determination of vitamin B₁₂ and its derivatives
by paper chromatography. Mikrobiologiya 28 no.4:490-494 Jl-Ag '59.
(MIRA 12:12)

1. Institut mikrobiologii AN SSSR.
(VITAMIN B₁₂ chem.)
(ESCHERICHIA COLI)

IYERUSALIMSKIY, N.D.; KONOVA, I.V.; NERONOVA, N.M.; ANCHUROVA, A.I.

Determination of vitamin B₁₂ by the bioautographic method. Vit.
res. i ikh isp. no.5:119-132 '61. (MLA 15:1)

1. Institut mikrobiologii AN SSSR, Moskva.
(CYANOCOBALAMINE) (BIOLOGICAL ASSAY)

L 29146-66

ACC NR: AP6018678

SOURCE CODE: UR/0020/65/161/006/1137/1140

AUTHOR: Iyerusalinskiy, N. D. (Corresponding member AN SSSR); Heronova, N. H.

34
B

ORG: none

TITLE: Qualitative relationship between the concentrations of metabolic products and rate of growth of microorganisms

22

SOURCE: AN SSSR. Doklady, v. 161, no. 6, 1965, 1137-1140

TOPIC TAGS: plant growth, plant metabolism, microbiology, biologic metabolism, biochemistry, plant chemistry, amino acid, protein, acetic acid, vitamin, bacteria, bacteriology

ABSTRACT: The Michaelis-Menten equation of a simple enzymatic reaction: $\mu = \mu_{\max} S / (K_s + S)$, where μ is the rate of growth per unit growing biomass, is used to characterize the complex process of growth, since in those cases when one of the enzymatic reactions is the "bottleneck" in metabolism and its rate limits the course of all the other biochemical transformations, growth of the biomass results. Equations incorporating the influence of inhibiting substances are derived. The hypotheses advanced on the influence of metabolic processes on growth were verified on a culture of *Propionibacterium shermanii*. Grown on media with lactate, the bacteria assimilate part of it as the carbon source and ferment all the remaining lactate to

Card 1/2

L 29146-66

ACC NR: AP6018678

propionic and acetic acids; the energy liberated in the fermentation provides for the vital functions of the microorganisms, including their growth. The medium used contained all the required mineral salts, amino acids, and vitamins in excess; under these conditions growth could be limited only by the concentration of lactate itself or of the products formed from it. The theoretically calculated curve agreed satisfactorily with the empirical data. According to preliminary data, the same type of relationship exists between the acetic acid concentration and the rate of growth of acetic acid bacteria. Orig. art. has: 3 figures and 6 formulas. [JPRE]

SUB CODE: 06, 07 / SUBM DATE: 22Dec64 / ORIG REF: 003

Card 2/2 AB

Neronova, N.N.

USSR/Solid State Physics - Solid State Theory. Geometric Crystallography, E-2

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34579

Author: Belov, N. V., Neronova, N. N., Smirnova, T. S.

Institution: None

Title: The 1651 Shubnikov Group

Original Periodical: Tr. In-ta. kristallogr. AN SSSR, 1955, No 11, 33-67

Abstract: The Shubnikov groups -- spatial antisymmetry groups, "generalized Fedorov groups" -- are used in the theory and practice of the interpretation of crystal structures using harmonic analysis (Referat Zhur - Fizika, 1956, 28383). A derivation of the Shubnikov groups by the "classical method" is given (Belov, N. V., Tr. inst. kristallogr. AN SSSR, 1951, No 6, 25-68). Using the definition of the "colored" translation -- antisymmetry pitch definition, the authors derive all the possible Bravais lattices for the Shubnikov groups and give the theorems necessary for the derivation of the groups. Many examples, analyzed in detail, illustrate the method of the derivation. The results previously made by A. M. Zamorzayev (Generalization of Fedorov Groups, Dissertation, 1951) mathematical derivation of groups are compared with the independently derived value by the "class" method leads to the number 1651. A list of all the groups by syngonies is given.

/ of /

- 1 -

NERONOVA, N. N.

70-3-1/20

AUTHOR: Belov, N.V., Neronova, N.N. and Smirnova, T.S.

TITLE: Shubnikov groups (Shubnikovskiy gruppy)

PERIODICAL: "Kristallografiya" (Crystallography), 1957,
Vol. 2, No. 3, pp. 315 - 325 (U.S.S.R.)

ABSTRACT: 1 651 Shubnikov groups are presented in the new international notation, prefaced by few fundamental theorems, which govern their derivation.

The derivation of these groups is easily performed if we start from two-coloured translation groups; 36 such groups exist, of which 22 are two-coloured and 14 are ordinary Bravais lattices.

An obvious theorem states that with a two-coloured lattice every (two)-coloured element of symmetry either coincides with a non-coloured element of the same kind (plane, axis, centre) or alternates with it. In the notation of such Shubnikov groups it is sufficient to place behind the symbol of the coloured lattice only non-coloured elements of symmetry, i.e. one of the Fedorov groups.

With the non-coloured lattice, i.e. when we have the ordinary Bravais lattice, we have in the notation coloured elements. Introduction of them is governed by two simple theorems. According to the first one, odd elements of

Card 1/3

Shubnikov groups (Cont.)

70-3-1/20

symmetry (threefold axes) can be only uncoloured or grey, i.e. Shubnikov groups with these elements of symmetry do not exist. According to the second, if we have a finite or infinite two-coloured (black-white) pattern and then reconstitute the black half of components for the white ones, we obtain one of the ordinary (one-coloured) Fedorov groups. This means that when the lattice is an ordinary Bravais lattice all two-coloured groups can be derived by systematic substituting of one, two or three independent symbols in the appropriate Fedorov group by the two-coloured symbols.

A complete list is given of the 1 651 Shubnikov groups (pp. 318 - 325), which includes also the 230 Fedorov groups and an equal number of grey groups. Two-coloured elements are denoted by an apostrophe. Grey groups are denoted by an additional 1'. This symbol does not appear in cubic groups, where we consider it appropriate to displace this apostrophe to the symbol of the (odd) axis 3.

The derivation of Shubnikov groups was first accomplished in 1953, by A.M. Zamorzaev (2,3,4). In 1954 the authors derived them by the more crystallographic method, which had been used in a short textbook of Fedorov groups by N.V. Belov. In these two papers one can find all the theorems which are

Card 2/3

Shubnikov groups (Cont.)

70-3-1/20

of use in this derivation.

This is an almost complete translation of the text.

There are 1 table and 6 references, all of which are Slavic.

ASSOCIATION: Institute of Crystallography, Ac.Sc. U.S.S.R.
(Institut Kristallografii, AN SSSR)

SUBMITTED: March 9, 1957.

AVAILABLE: Library of Congress

card 3/3

SOV/70-3-5-22/24

AUTHORS: Donnay, G., Belov, N.V., Neronova, N.N. and Smirnova, T.S.

TITLE: On the Shubnikov Groups (O Shubnikovskikh gruppakh)
(Letters to the Editor)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 5, pp 635-636 (USSR)

ABSTRACT: Letter from the first author. Baltimore, USA, April 12, 1958:

It is suggested that in the deduction of the 36 P_a groups of the Shubnikov (black and white) groups 12 groups are not distinct but are only repetitions in different orientations of others. 12 other groups are thought to have been omitted.

Derivations of the groups 387 (P_{accm}) and 388 (P_{abmb}) are taken as examples. It is found that P_{abmb} must be replaced by P_{amaa} . The co-ordinates of the black and white equivalent points in the 3 groups are listed. All co-ordinates of P_{abmb} can be transformed into those of P_{accm} by the following matrix: the co-ordinates of the black and white points are exchanged. No matrix will

Card 1/3

SOV/70-3-5-22/24

On the Shubnikov Groups

transform co-ordinates in $P_{a\text{maa}}$ into those in $P_{a\text{ccm}}$.

The simple rule is that if the x - co-ordinates are identical for two settings connected by a transformation matrix, then the two P_a -symbols will correspond to

different settings (aspects) of the same Shubnikov group.

The groups following are therefore doublets (numbers as in Trudy Inst. Kristallog., 1955, Vol 11, p 33):

372, 371; 374, 373; 377, 375; 380, 378; 385, 384;
388, 387; 390, 389; 392, 391; 394, 393; 395, 396;
400, 399; 402, 403.

The following groups should be added $P_{a\text{maa}}$, $P_{a\text{ncb}}$,

$P_{a\text{bmm}}$, $P_{a\text{baa}}$, $P_{a\text{mcb}}$, $P_{a\text{naa}}$, $P_{a\text{bcm}}$, $P_{a\text{bmm}}$, $P_{a\text{mcn}}$,

$P_{a\text{nca}}$, $P_{a\text{nmn}}$, $P_{a\text{mnn}}$.

Reply from the other authors, Moscow, July 4, 1958:

These mistakes have already been acknowledged and corrected in Kristallografiya, 1957, Vol 2, Nr 3, pp 315-25.

Card 2/3

SOV/70-3-5-22/24

On the Shubnikov Groups

Canonical forms of the 12 additional groups listed above are given, together with the group numbers and equivalent groups. All are preferred in the setting P_a as above.

There are 2 Soviet references.

SUBMITTED: July 11, 1958

Card 3/3

24.7100

77100
SOV/70-4-6-1/31

AUTHORS: Neronova, N. N., Belov, N. V.

TITLE: Ferromagnetic and Ferroelectric Space Groups

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 807-812 (USSR)

ABSTRACT: The authors selected 31 ferroelectric point groups out of 90 point groups of the Shubnikov classification (plus-minus groups, groups of antisymmetry, black and white groups) in a similar way as they previously had selected 31 ferromagnetic point groups out of the same 90 point groups. The principal differences between the ferromagnetic and ferroelectric groups are: (1) the former's symmetries are subdivisions of the limiting axial vector symmetry described by $\frac{\infty}{m} \frac{2'}{m'} \frac{2'}{m'}$, and of the latter's by $\frac{\infty}{m} \frac{2'}{m} \frac{2'}{m}$; superscripts denote antisymmetry elements, (2) ferroelectrics require absence of a center of symmetry, 1, while

Card 1/3

Ferromagnetic and Ferroelectric
Space Groups

77100

SOV/70-4-6-1/31

ferromagnetics require a center of antisymmetry, $1'$, (3) equator planes are mirrors in ferromagnetic groups and colored (black and white) planes in ferroelectrics, (4) longitudinal planes, on the contrary, are mirrors in ferroelectric groups and colored planes in ferromagnetic groups. The symbolic descriptions of 10 axial groups out of 31 are outwardly identical in both cases but ferromagnetism and ferroelectricity never occur in the same group because of internal "micro" discrepancy. The same is true in the case of $2'$ mm' point group of which ferroelectric and ferromagnetic space groups differ from one another because of relocation of two different planes. On the basis of these distinctions, 275 ferromagnetic and 275 ferroelectric space groups are selected out of the 1651 space groups of the Shubnikov classification and compiled in a four page table that describes the included point and space groups in international symbols. There is 1 table; and 6 references, 5 Soviet, 1 Danish.

Card 2/3

Ferromagnetic and Ferroelectric
Space Groups

77100
SOV/70-4-6-1/31

ASSOCIATION: Crystallographical Institute of the Academy of Sciences
of the USSR (Institut kristallografii AN SSSR)

SUBMITTED: September 1, 1959

Card 3/3

~~24 (3), 24 (2)~~ 24.7000

AUTHORS:

Neronova, N. N., Belov, N. V.,
Academician

66455

SOV/20-129-3-23/70

TITLE:

The Symmetry of Ferroelectrics

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 3, pp 556-557 (USSR)

ABSTRACT:

B. A. Tavger (Ref 1) showed a short time ago that the point-symmetry (macrosymmetry) of ferromagnetics is described by the 31st group of the total number of 90 Khayesh-Shubnikov groups (plus-minus groups, black-and-white groups). The main vector is known to be the most characteristic element of ferroelectrics as well as of ferromagnetics, but in ferromagnetics it is a polar vector, and in the case of ferroelectrics it is an ordinary axial vector. The maximum symmetry of the axial vector is $\frac{\infty}{m} \frac{2'}{m'} \frac{2'}{m'}$, and that of the polar vector is $\frac{\infty}{m'} \frac{2'}{m} \frac{2'}{m}$. These symbols are of the "international" type. The 31st crystallographical group is a subgroup of the two groups of maximum symmetry, and it supplies the required groups. A table contains the ferromagnetic and ferroelectric symmetry groups for the various crystal systems given in

Card 1/2

4

The Symmetry of Ferroelectrics

66455

SOV/20-129-3-23/70

international denotations. In all cases (except in the monoclinar groups) the z-axis was chosen as the direction of the main vector. An interesting survey of all spatial ferromagnetic and ferroelectric groups will be published in the next issue of the periodical "Kristallografiya". There are 1 table and 4 Soviet references.

SUBMITTED: August 21, 1959

4

Card 2/2

ALEKSANDROV, K.S.; KLEVTSOV, P.V.; MERONOVA, N.N.

Fifth International Congress on Crystallography. Zhur. strukt.
khim. 1 no. 4:504-507 R-D '60. (MIRA 14:2)
(Crystallography—Congresses)

S/070/60/005/004/002/012
E132/E360

AUTHORS: Indenbom, V.L., Belov, N.V., and Neronova, N.N.

TITLE: The Point Groups of Colour Symmetry (Coloured
Classes)

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 4,
pp 497 - 500 + 1 plate

TEXT: The concept of colour symmetry is applicable not only to plane and space groups but also to the point groups. For two colours there will be 58 (magnetic) classes. The coloured point groups have been derived before (O. Wittke and J. Garrido, Bull. Soc. franc. miner.cristall., 223-30, 1959) but in this case are lost among the 211 ways of colouring polyhedra which the authors described. All the 18 multicoloured classes are listed and illustrated by coloured figures. The ordinary 32 point groups have, in all, 18 pairs of complex conjugate one-dimensional representations. These are listed and each is shown to correspond to a colour group. In the notation primes indicate the coloured element. The parent group is given first:

Card 1/2

Card 2/2

ALTMANOV, R. A., Institute for Physical Problems,
Moscow - "Neutronographic study of NiO₂"
(Section J-2)
BELLOV, E. V., Associate Director, Institute of
Crystallography, Academy of Sciences USSR, Moscow -
"Magnetic (ferromagnetic) space group symmetry"
(C-6)
BELLOV, E. V., MOSKOV, P. K., Both Institute of
Crystallography, Academy of Sciences USSR, Moscow,
DORNAV, J. D. E., Johns Hopkins University,
Baltimore, Md., and KORNAY, G. E., Geophysical
Laboratory, Carnegie Institution, Washington, D. C. -
"Tables of magnetic space groups, II. Special
positions" (C-6)
BRYUKHIN, V. A., Institute for Physical
Problems, Moscow - "On the theory of the
magnetic structure of ferromagnetic materials in carbonated
iron" (H-16)
BROVIE-RODNEY, A. B., ALZHEIM, G. -
"Antiferromagnetism" (H-16)
KONNEN, J. J., Head, Magnetism Laboratory,
Moscow State University - (1) "The electrical and
magnetoelectric properties of thin films at very
low temperatures" (H-5); (2) "On the connection
between the spontaneous magnetization of current
carrying ferromagnetic materials and the
magnetic structure of the materials" (H-16)
LONCHET, B., and VAN DER WOUDE, B., Institute of
Crystallography, Moscow - "Neutron diffraction
study of thionure CO (NiO)₂"
LYASHENKO, D. G., Central Scientific Research
Institute of Metallurgy, Moscow - "The problem
of the influence of spontaneous magnetization on
crystal structure and phase state of alloys" (H-6)
LYASHENKO, D. G., LITVIN, P. F., RYZH, I. M., AND, Ya. G.
Central Scientific Research Institute of
Metallurgy, Moscow - "Neutron diffraction
investigation of order-disorder in the alloys
'ferrum-nickel and ferrum-cobalt'" (J-1)
OZERY, R. F., KOLLA, V. S., ZHAKOV, O. S.,
Scientific Research Physico-Chemical Institute
and L. Ya. Karpov, Moscow - "Neutron diffraction
study of the structure of solid hydrogen and
deuterium" (C-6)
PESCHEN, E. G., Institute of Crystallography, Academy
of Sciences USSR, Moscow - "Results and progress
of electron diffraction analysis" (C-11)
RIZOV, I., Scientific Research Institute of
Metallurgy, Moscow - "Magnetic anisotropy in
ferromagnetic alloys" (H-5)
RIZOV, I., Scientific Research Institute of
Metallurgy, Moscow - "Some problems of the
physics of high coercive materials" (H-17)
RIZOV, I., Scientific Research Institute of
Metallurgy, Moscow - "Some investigations of non-metallic
ferro and antiferromagnetics" (H-13)
VATSEKIN, B. K., Institute of Crystallography,
Academy of Sciences USSR - "Development of electron
diffraction method" (C-11)
VATSEKIN, B. K., RIZOV, I. F., RIZOV, I. F., Institute
of Crystallography, Moscow - "Atomic and magnetic
structures of magnetic ferrites" (J-2)
YEREMENKO, B. V., Institute of the Physics of Metals,
Academy of Sciences USSR, Dnepropetrovsk. A member
of the IUPAP Commission on Magnetism. See
paragraph 1 of Comment for a complete listing of
members of the Commission. "Some investigations
of Soviet physics on the theory of ferromagnetism
for the last years" (Invited paper, Section H-11)

USSR (cont.)

Paper to be submitted for the IUPAP Intl. Conference on Magnetism and
Crystallography, Kyoto, Japan, 29-30 Sep 1961

NERONOVA, N.N.; BELOVA, N.V.

Colored antisymmetrical mosaics. Kristallografiia 6 no.6:831-
839 N-D '61. (MIRA 14:12)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN
SSSR i Institut kristallografii AN SSSR.
(Crystallography)

BELOV, N.V.; KUNTSEVICH, T.S.; NERONOVA, N.N.

Shubnikov groups (of antisymmetry) for infinite bilateral bands.
Kristallografiia 7 no.5:605-606 S-O '62. (MIRA 15:12)

1. Institut kristallografi AN SSSR.
(Crystallography)

NERONOVA, N.N.; BELOV, N.V., akademik

Crystalline structure of elpidite $\text{Na}_2\text{Zr}[\text{Si}_6\text{O}_{15}] \cdot 3\text{H}_2\text{O}$. Dimorphism
of dimetasilicate radicals $[\text{Si}_6\text{O}_{15}]$. Dokl. AN SSSR 150 no.3:
642-645 My '63. (MIRA 16:6)

(Elpidite crystals)
(Radicals(Chemistry))

BELOV, N.V.; NERONOVA, N.N.; KUNTSEVICH, T.S.

Drawings showing crystal structures in Shubnikov antisymmetry groups. Kristallografiia 9 no.2:147-154 Apr '64. (MIRA 17:5)

1. Institut kristallografi AN SSSR.

NERONOVA, N.N.; BELOV, N.V.

Crystalline structure of elpidite $\text{Na}_2\text{Zr}(\text{Si}_6\text{O}_{15}) \cdot 3\text{H}_2\text{O}$.
Kristallografiia 9 no.6:828-834 N-D '64.

(MIRA 18:2)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN
SSSR.

NERONSKAYA, Zina [Niaronskaia, Dzina]; BELYAKOVSKAYA, Raya [Beliakouskaia,
Rais]; LEVCHUK, Mariya [Liauchuk, Maryia]; PISARYK, Nina

We shall settle in virgin lands too. Rab. i sial. 37 no. 7:
9 J1 '61. (MIRA 15:2)

(Siberia--Women as farmers)

NERONSKIY, O. G. Cand Med Sci, -- "Hygienic evaluation of the labor conditions
of painters in spray ~~painting~~ ^{painting} at the Minsk automobile plant." Kiev, 1961
(Kiev Order of Labor Red Banner Med Inst im Academician A. A. Bogomolets).
(KL, 4-61, 210)

-366-

NERONSKIY, O.G.; VILISOV, B.A.

Current status and tasks of industrial hygiene supervision in
the White Russian S.S.R. Zdrav.Bel. no.3:47-49 '62.

(MIRA 15:5)

1. Kafedra gigiyeny Minskogo meditsinskogo instituta (zavedu-
yushchiy - professor Z.K. Mogilevchik) (for Neronkiy). 2. Gosu-
darstvennyy sanitarnyy inspektor Minzdrava BSSR (for Vilisov).
(WHITE RUSSIA--INDUSTRIAL HYGIENE)

NERONSKIY, O.G.

Combined poisoning with lead and organic solvents. Vrach. delo
no.5:101-104 My '62. (MIRA 15:6)

1. Kafedra gigiyeny (zav. - chlen-korrespondent AMN SSSR,
prof. Z.K. Mogilevchik) Minskogo meditsinskogo instituta.

(LEAD-POISONING)
(SOLVENTS—TOXICOLOGY)

NEROSLAVSKAYA, L.I.; SERGEYEV, V.V.

Method of approximate determination of the specific
surface area of a titanium sponge. Zhur.prikl.khim.
38 no.9:1966-1972 S '65. (MIRA 18:11)

SSV/136-50-11-3/21

AUTHORS: Biryukova, L.V.
Neroslavskaya, L.L.

TITLE: Influence of the Chloride Salts of Titanium on the
Quality of Titanium Sponge (Vliyaniye khloristykh
soley titana na kachestvo gubchatogo titana)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 11, pp 43-46 (USSR)

ABSTRACT: Titanium sponge generally contains some di- and
trivalent titanium chlorides which can have a
considerable effect on its properties. The authors
deal with the behaviour of titanium chlorides during
storage and hydrometallurgical treatment of the crude
sponge and the influence of the chlorides on the metal
properties. They used chlorine compounds obtained from
titanium sponge and titanium tetrachloride by reaction
at 900°C and a pressure below 200 mm. Hg. Hydrolysis
of the chlorides occurred on storing a melt of the
dichloride with sodium chloride in air, shown by gain
in weight (fig.1). Even small concentrations (0.1-1.1%Ti
as chlorides) led to the formation of a non-fusible

Card 1/3

SOV/136-58-11-8/21

Influence of the Chloride Salts of Titanium on the Quality of
Titanium Sponge

sponge if the mass was crushed and stored with access of air. Solutions in water and acids of the dichloride or its melts with other chlorides are oxidised and the trichloride forms the tetrachloride; titanium dioxide also being formed. The rate of dioxide formation was found to depend on the acid and its concentration used (table 2 - fig.3) and on the temperature (table 3). To prevent contamination of the crude sponge with oxygen the authors recommend that it should be treated immediately or stored in hermetically sealed containers; contact with moist air during crushing and transport should be minimised; the optimal hydrochloric-acid strength for leaching crude sponge is about 1% and neither water nor very weak acid solutions nor nitric acid should be used; coloration of the solution is not a reliable index of the concentration of titanium chlorides since the colour changes on keeping the solution in air; sponge should not be kept long in a

Card 2/3

SCN/136-52-11-2/21

Influence of the Chloride Salts of Titanium on the Quality of
Titanium Sponge

titanium-chloride-containing solution; leaching of
crude sponge without inhibitors should be effected
without much temperature increase. There are 3 figures
and 3 tables.

Card 3/3

S/080/60/033/012/020/024
D209/D305

AUTHORS: Biryukova, L.V., Neroslavskaya, L.L., and Mekhova, E.V.

TITLE: Specific surface of titanium sponge

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 12, 1960, 2791 - 2793

TEXT: The authors measured the specific surfaces of samples of titanium sponge obtained through the reduction of $TiCl_4$ with Mg and Na, the electrolysis of $TiCl_4$ and the electrolytic refining of titanium tailings in order to ascertain the relationship between the size of the specific surface and the amount of impurities absorbed in the process of its synthesis. The sponge is first sieved into its constituent size-fractions. The dimensions of the specific surface of the finest fractions (< 0.11 mm) are then determined by the method of V.V. Deryagin et al (Ref. 1: Opredeleeniye udel'noy poverkhnosti poroshkoobraznykh tel po soprotivleniyu fil'-

Card 1/3

Specific surface of titanium ...

S/080/60/033/012/020/024
D209/D305

tratsii razrezhennogo vozdukha (Determination of the Specific Surface of Powdered Bodies by the Resistance of Rarefied Air to Filtration), Moscow, 1957); before measurement the fractions are squeezed into a metallic husk in a hydraulic press with a load of 50 - 150 kg/cm². In the case of the coarser fractions, however, a weighed portion is reacted with 10 % HCl and filtered after 24 hours, when the titanium content is estimated colorimetrically. The specific surface of the whole specimen is calculated from the rate of metal solution, the size of the specific surface of one of the fine fractions measured by the Deryagin apparatus and the quantities of dissolved titanium. The experimental values thus obtained vary within wide limits: 0.1 - 0.2 m²/g for coarsely-crystalline sponge and 5 - 6 m²/g for fine material, with a mean of 0.4 - 0.6 m²/g. There appears to be little difference in the dimensions of the specific surface of sponges prepared by the Mg - Na reduction process and by electrolytic refining, but the specific surface of sponge precipitated through the electrolysis of TiCl₄ is much larger. Analyses of separate fractions for hydrogen, oxygen and other

Card 2/3

Specific surface of titanium ...

S/080/60/033/012/020/024
D209/D305

substances indicate a linear relationship between the specific surface and the content of impurities. In conclusion, the authors note the inevitability of the formation of a heterogeneous titanium sponge, but they emphasize the need for trying to increase the yield of coarsely-crystalline sponge in view of its smaller specific surface. There are 2 figures, 1 table and 1 Soviet-bloc reference.

SUBMITTED: February 29, 1960

Card 3/3


S/598/61/000/006/010/034
D245/D303

AUTHORS: Biryukova, L.V., Neroslavskaya, L.L., and
Aleksandrovskiy, S.V.

TITLE: Hydrometallurgy of titanium

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i
yego ~~plavy~~ plavy. no. 6, 1961. Metallotermiya i elektro-
khimiya titana, 68 - 79

TEXT: In a survey of hydrometallurgical techniques for obtaining Ti metal from the products of reduction of $TiCl_4$ with Mg or Na and of electrolytic processes, it is pointed out that the quality of Ti metal obtained is largely dependent on the specific surface of the initial Ti sponge formed owing to the unavoidable oxidation of the metal in air. In treating the reaction masses from Mg or Na reduction processes, it is shown that the dissolution of the Mg or Na chlorides in the Ti sponge depends in its speed on the degree of pulverization of the reaction mass, mixing conditions and the ratio of solid to liquid phase during leaching. Mg metal dissolution in



Card 1/3

Hydrometallurgy of titanium

S/598/61/000/006/010/034
D245/D303

acid leaching is dependent on metal surface, acid concentration and temperature and is endothermic. Dissolution of unreacted Na metal requires great care. Ti di-, tri-, and tetra-chlorides are hygroscopic and during water leaching, hydrolyse. Ti sponge itself is a crystal agglomerate of varying crystal dimensions. The density of the sponge depends on the size and structure of the crystals and their distribution in the reaction mass. The bulk of the crystals are dendritic in nature. The specific surface of a sponge is determined by B.V. Deryagin's method (Ref. 2: Izd-vo, AN SSSR, 1957) Oxidation of sponge in air or water was measured by an optical polarization method by V.V. Andreyeva (Ref. 4: Tr. In-ta fiz. khimii, 1957, VI, 2, 79) who found that there was marked oxidation of Ti at low temperatures. During hydrometallurgical treatment, contamination of the sponge with H₂ is unavoidable but can be minimized by introducing surface active inhibitors during leaching, or by using oxidizing agents in leaching which will oxidize any H₂ formed. During leaching the metal freed from salts becomes rapidly coated with a protective layer which prevents substantial Ti losses due to corrosion. With a reaction mass obtained by Na reduction, Ti

Card 2/3

Hydrometallurgy of titanium .

S/598/61/000/006/010/034
D245/D303

loss is about 0.5%. The quality of the sponge formed depends on a large number of factors, but metal quality attained is generally high. Reaction masses obtained electrolytically or by Na reduction are either immediately treated or hermetically sealed in a container until treated. Prior to leaching, the mass is pulverized to a particle size range of 3 - 10 mm. Leaching is carried out in two stages, firstly with 1 % HCl, secondly with 0.5 % HCl. The solid/liquid phase ratio is 1:4. The leached sponge is washed with water and dried in a hot air flow (70 - 110°C) in a time of 2 1/2 hours. There are 3 figures, 2 tables and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: W.A. Alexander and L.M. Pidgeon, Canadian Journal of Research, 1950, v. 28, no. 2, 60. ✓

Card 3/3

BIRYUKOVA, L.V.; NEROSLAVSKAYA, L.L.

Oxidation of titanium at low temperatures. Zhur.prikl.khim.
35 no.7:1629-1633 J1 '62. (MIRA 15:8)
(Titanium) (Oxidation)